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LEARNING STYLE'S ROLE IN THE ACADEMIC PERFORMANCE OF INTERNATIONAL BUSINESS AND MANAGEMENT STUDENTS AT A UNIVERSITY INSTITUTION IN PERU

Paola Verónica Valdivia Rodríguez

Universidad Internacional Iberoamericana (Mexico)

paola.valdivia@doctorado.unini.edu.mx · <https://orcid.org/0000-0002-0429-8399>

Martín Eliseo Tamayo Ancona

Universidad Internacional Iberoamericana (Mexico)

martin.ancona@unini.edu.mx · <https://orcid.org/0000-0003-1020-1300>

Abstract. A quality university education, consistent with the standards of the educational system, supported by a flexible teaching management focused on learning and good academic results, strives to constantly update and innovate their classes with better strategies that motivate a significant development in their students. The model of learning styles of Honey - Alonso (1992), is consolidated in the university context as a validated instrument that recognizes the profile of each student to improve their experience, making it simpler and more satisfactory, allowing them to be better learners in different contexts. The purpose of this study is to identify the learning styles of students in the Administration and International Business program at La Salle University (2021) and to determine the possible correlation between learning styles and academic performance, gender and study cycle. The research has a quantitative nature of descriptive-correlational scope, the Honey - Alonso Questionnaire of Learning Styles (CHAEA) and the record of the grades of the previous cycle of the students of the selected professional career were used. The results indicate that the Theoretical style is the most preferred among university students in this career, and there is no relationship between learning style and sex or study cycle, and it can be affirmed that there is a relationship between learning styles and academic performance.

Key words: University education system, academic quality, learning style, academic performance, CHAEA.

FUNCIÓN DEL ESTILO DE APRENDIZAJE EN EL RENDIMIENTO ACADÉMICO DE LOS ESTUDIANTES DE ADMINISTRACIÓN Y NEGOCIOS INTERNACIONALES EN UNA INSTITUCIÓN UNIVERSITARIA EN PERÚ

Resumen. Una educación universitaria de calidad, coherente con las normas del sistema educativo, sustentado por una gestión docente flexible enfocada en el aprendizaje y buenos resultados académicos, se esmera en constantemente actualizar e innovar sus clases con mejores estrategias que motiven un desarrollo significativo en

sus estudiantes. El modelo de los estilos de aprendizaje de Honey - Alonso (1992), se consolida en el contexto universitario como un instrumento validado que reconoce el perfil de cada alumno para mejorar su experiencia, haciéndola más sencilla y satisfactoria, para lograr ser mejor aprendiz en diferentes contextos. El presente estudio tiene como objetivo identificar los estilos de aprendizaje en los estudiantes de la carrera de Administración y Negocios Internacionales de la Universidad La Salle (2021), y determinar la posible correlación entre los estilos con respecto del rendimiento académico, sexo y ciclo de estudio. La investigación es de naturaleza cuantitativa de alcance descriptivo – correlacional, se utilizó el Cuestionario Honey – Alonso de Estilos de Aprendizaje (CHAEA) y el registro de las notas del ciclo anterior de los estudiantes de la carrera profesional seleccionada. Los resultados indican que el estilo Teórico es el de mayor preferencia entre los alumnos universitarios de esta carrera, además no hay relación entre el estilo de aprendizaje con el sexo o el ciclo de estudio, y se puede afirmar que existe relación entre los estilos de aprendizaje con el rendimiento académico.

Palabras clave: Sistema educativo universitario, calidad académica, estilo de aprendizaje, rendimiento académico, CHAEA.

Introduction

The impact of the universities on the development of society is paramount. Moreover, they are not independent entities and are part of the Peruvian university system which, in turn, depends directly on the Ministry of Education and, consequently, on its policies, investment and management. Thus, after a disorderly massification of the Peruvian university offer, the very essence of the institution was distorted, bending the social and academic role of universities in a gradual state of commercialization, so that, in the search for improving university education, as the highest exponent of training, by 2014 the University Law No. 30220¹ was enacted and with it the National Superintendence of University Higher Education (SUNEDU²), including the notion of mandatory licensing of universities.

Cuenca (2015) states that: "A person trained in a poor-quality institution will only contribute to increasing professional underemployment rates or, worse, informality in the country" (p.12). In general, a university institution that appreciates to offer education under the basic conditions of quality³ must put special interest in the learning level of its students, promoting the integral development of the student during his university life and not only in the profitability of the institution. It further states that: "Learning is increasingly based on the ability to search, access and apply knowledge in the solution of problems, based on the use of a complex set of skills" (Cuenca, p.72), since, in order for students to achieve their academic objectives in addition to university management, it is necessary that they themselves take an active role in their education.

On the other hand, Quiroz and Franco (2019) indicate that: "One way to measure the achievement of learning attained by students is through the analysis of academic performance, as an elemental factor to demonstrate quality in higher education" (p. 169). The result of knowledge is the reflection of the complex process of teaching in which various academic instruments are used, which are necessary so that, at the moment of evaluating the student, the acquired capacities can be verified; that is to say, that the evolutionary enrichment of the student

¹ Article 1. The purpose of this Law is to regulate the creation, operation, supervision and closing of universities. Promotes the continuous improvement of the educational quality of university institutions as fundamental entities of national development, research and culture.

Article 2. The present Law regulates universities under any modality, whether public or private, national or foreign, operating in the national territory (Ministry of Education (2014, July 3). University Law No. 30220.

² Responsible for licensing, which is understood as the procedure that aims to verify compliance with basic quality conditions" (SUNEDU, 2015, p.16).

³ These are minimum standards that serve as general guidelines for the evaluation of the university's capacity to provide higher education services and authorize its operation (SUNEDU, 2015, p.8).

is reflected. Palomino (2018) defines academic performance as: "the fulfillment of the objectives, goals and achievements established for each area studied by the student" (p. 69); which is summarized in a quantitative grade on a scale of 0 to 20 and according to the national curriculum design. A student who achieves a score between 0 and 10 is called "failed" and a student who achieves a score between 11 and 20 is called "passed".

The purpose of the study is to establish the relationship between the learning styles of Honey - Alonso with the level of academic achievement in students of the Administration and International Business degree at La Salle University. In order to achieve the objective of the research, it is appropriate to delimit some aspects.

In formal higher education⁴ learning is a process that is experienced in the classroom, basically moderated by a teacher; however, learning is born from personal experiences and each student finds a unique way of cultivating himself to grow academically, so it can be said that human beings throughout their lives usually experience learning in a particular way, even establishing patterns or habits with which the teacher must work. Yacarini and Gómez (2005) indicate:

In different situations, styles vary according to age and levels of demand in the learning task. In university students these styles allow to identify and improve the personal styles of each one of them, to teach them with their predominant learning styles and to select educational methodologies according to the learning styles of the group (p. 97).

Regarding the training process, a university campus shares the following circumstances: first, the student understands better the lessons given by some teachers and consequently his learning process with those teachers is easier and with better academic results. Second, the teacher perceives that his methodology has a greater effect on a group of students who also tend to be more committed to their education and, in general, show an optimal academic performance, while another group has more time and effort to pass the course and even has the possibility of doing so without learning; all in front of the passive look of the teacher who, despite his expectations, is used to the circumstances and the results. In other words, a constant in university education is that not all people learn in the same way, and usually they are closer to a particular type of learning, so the recognition of the style that each student possesses would favor the timely use of methodologies and strategies more appropriate for university students.

Biggs (1987, cited in Ortiz et al., 2014), presents four conditions to generate quality learning in the university student: well-structured knowledge, motivational context, activity on the part of the student and interaction with others. These conditions allow for a satisfactory student-teacher relationship and, consequently, both can afford the same goal, meaningful learning for all students. Alonso, Gallego and Honey (2012) indicate:

Genuine equality of educational opportunity for students does not mean that they have the same book, the same schedule, the same activities, the same tests ... The style of teaching by the teacher can mean unconscious favoritism for students with the same learning style, the same thinking systems and mental qualities (p. 44).

In the search to provide better educational opportunities and in an effort to build a better higher education, the new University Law⁵ was approved, which maintains the following guiding principles: academic quality, continuous improvement of academic quality, critical spirit and research, and the best interest of the student, among others. Faced with the

⁴ It is the education provided in approved educational establishments, in a regular sequence of school cycles, subject to progressive curricular guidelines and leading to degrees and diplomas (SINEACE, 2010, p. 29).

⁵ University Law No. 30220

responsibility of training competent professionals who contribute to the needs of society, with a teaching management that must be constantly flexible due to changes in the university system that articulates it, the main interest of academic institutions should be to provide an innovative and quality education⁶, which requires a type of methodology that allows the incorporation of transformative practices that make the student the center of learning.

Ortega, Casanova, Paredes and Canquiz (2019), reflect on the importance of students themselves connecting with their learning style to face any academic challenge or difficulty. They say: "Systematizing this process can be a resource for the teacher to select individualized strategies to take advantage of each potential and overcome the difficulties of the training environment" (p. 714). And to identify the level of learning it is usual for the teacher to use academic performance as an indicator. Aranda (1998, as cited in Cuayla, 2017), indicates that academic performance: "is the result of school achievement in terms of different school objectives and there are those who homologate that academic performance can be defined as success or failure in the study, expressed through grades or grades" (p.24). Certainly, a student could not share the feeling of self-realization with the rest of his peers if he fails the course; however, the fact that he passes the course is not evidence that he has achieved significant learning of the subject.

In order to understand Honey-Alonso's model of learning styles, it is necessary to understand the theories that allowed it to evolve into the CHAEA, a validated instrument used in university education. The theory presented by Kolb (1984, cited in Kolb and Kolb, 2005) is a model aimed at the training of managers in the United Kingdom, a determining characteristic for understanding the model's approach. The initial concern was to know why is it that two people who share the same circumstances, one learns and the other does not. This is because people have different needs when learning, some of which are met and others are not. Kolb's proposal consists of four stages, and learning is considered to be contingent on the learner's experience. Kolb (2015, cited in Fuentes, 2019), details some of the activities that impact students:

- Concrete experience. Receives new information through the senses. Activities include: Simulation, observation, videos and problem sets.
- Reflective observation. Transforms experience through observation and reflection. Activities include: Processing questions, as well as brainstorming and discussions.
- Abstract conceptualization. Through thought, it produces new concepts and theories. Activities include: Analogies and model building.
- Active experimentation. Elaborates new information through experimentation.

Then, Honey and Mumford (1992), using Kolb's theory, give value to the fact that optimal learning is a circle that continuously feeds back to the learner's experience. Researchers then experiment with various approaches to obtain the Learning Style questionnaire. The research allowed them to find the reflective, theoretical, active and pragmatic styles; building the profile of the person with a model that provides a high level of detail in the characteristics of each of these styles. As part of the analysis of both models, Table 1 shows the similarities in the learning styles of Kolb, Honey and Mumford.

⁶ Educational innovation is aimed at the implementation of processes, strategies, ideas, etc., in a planned and systematized manner, with the objective of introducing changes in current educational practices. Its purpose is, therefore, the transformation of the educational reality for its improvement, modifying attitudes or methodologies involved in the teaching and learning processes (Navarro, 2017, p. 24)

Table 1

Honey - Mumford and Kolb's Comparison of Learning Styles

Honey - Mumford	Kolb
Active: Living the experience	Concrete experience
Reflective: Reflection	Reflective observation
Theoretical: Generalization, hypothesis development	Abstract conceptualization
Pragmatic: Application	Active experimentation

Note. Adapted from Alonso, Gallego, Honey (2012).

Thus, a few years later Honey - Alonso experimented with different approaches to obtain the questionnaire of Learning Style (CHAEA), which allows evaluating individual differences and preferences of students and whose main objective is to reason about the needs of people at the time of learning.

Honey - Alonso (1992), who shared the same conviction about the learning process as Kolb and valuing the previous model of Honey and Mumford, consider that, although each of the learning styles (active, theoretical, reflective and pragmatic) are equally important, they are not always all considered by teachers and at the moment of planning their sessions they usually direct their efforts towards one of them, for example: theorizing; and, consequently, they prioritize theoretical learning. This natural selection is evidenced by the exercises presented in class, as well as by the type of evaluation used, which, if it becomes a routine, may discriminate against students whose preferred learning style is different. Table 2 below shows the details of the learning styles:

Table 2
Description and characteristics of Honey - Alonso's Learning Styles.

Style	Description	Features
Active	Open-minded, enthusiastic, they thrive on challenges, prefer groups and center all their activities around them.	Animator, improviser, discoverer, risk-taker, spontaneous.
Reflective	They are characterized by gathering data and analyzing them in detail, they are prudent. They are observant and listen to others.	Thoughtful, conscientious, responsive, analytical, thorough.
Theoretical	They analyze problems vertically and stepwise, they consider logical stages, they are perfectionists, they consider a depth in the thinking system.	Methodical, logical, critical, structured.
Pragmatic	They apply the content they have learned, discover the positive aspects of ideas, and act quickly when faced with projects that catch their attention. They are impatient with people who theorize.	Experimental, practical, direct, effective, realistic.

Note: Adapted from Alonso, Gallego and Honey (2012)

Maureira, Bahamondes, and Aravena (2015), analyze the relationship between learning styles and academic performance of students in the first semester of the Pedagogy career, using the CHAEA and their previous academic history. The study focuses on 151 students, of which 30 are female, and the general age range is from 17 to 32 years old. The results indicate that the four learning styles have similar scores in students. In addition, the Active style correlates with academic performance negatively, the Theoretical style positively, and neither the Reflective nor the Pragmatic style is related to academic performance.

Chambi, Manrique and Espinoza (2020), in a quantitative-correlational study, investigated learning styles and academic performance in a public university by applying descriptive statistics and correlation analysis techniques, as well as Honey and Alonso's CHAEA. The sample was constructed from 70 interns from the School of Nursing, 82.9% of whom were female and 84.5% were between 20 and 25 years of age. The observed results show that the predominant style is Reflective and the academic performance of the students in general was classified as good and excellent, although no relationship was found between the variables.

Escanero, Soledad and Guerra (2018), study on learning styles and academic performance, using the CHAEA and the Learning Styles Inventory in 146 medical school students, in addition to using the SPSS program for the corresponding analysis. The study is a descriptive correlational cross-sectional study, with a sample composed of 73% women. The main conclusions are that the predominant style is Reflective, and there is no evidence that learning styles affect students' academic performance.

Huamán, Olivares, Angulo, Macazana (2020), with a quantitative approach of non-experimental design and basic type, investigated academic performance and learning styles in university students of the School of Systems, using the CAMEA 40 instrument, which is based on the CHAEA but composed of 40 items instead of 80. The sample consists of 100 students. The main results show that the variables are significantly related to each other; the styles with the highest scores are Reflective and Pragmatic; and regarding the relationship between learning style and academic performance, it is identified that the relationship is the same in comparison

to the level of the style itself, that is, if the students have a high preference style, they also have a high performance.

Method

The methodology used in the research is quantitative with a descriptive-correlational scope, since a mathematical description has been made with the respective statistic, and the correlation of two variables has been studied. The study population is made up of 347 students enrolled in the School of Management and International Business at La Salle University, using stratified probability sampling. To obtain the sample, the population was divided into strata taking into account the level of academic progress of the student, in relation to the academic cycles and the number of students enrolled in each one. With 95% reliability and a 5% margin of error, the sample size is 183 students, as presented below:

Table 3
Sampling

Ranking	Cycle	Students	Percentage	Sample
Home	I - IV	146	42%	77
Intermediates	V - VII	91	26%	48
Advanced	VIII - IX	110	32%	58
TOTAL		347	100%	183

The inclusion criteria applied are:

- Cycle of study: from I to X.
- Academic status: enrolled in the study period 2021-I and II; who agree to participate freely in the CHAEA virtual survey.
- Sex: female and male.
- Age and study schedule: indifferent.

The sample has a participation of 59.6% women and 40.4% men. To analyze participation by age, students were grouped into: under 20 years of age (30.6%), 20 to 22 years of age (32.8%), 23 to 25 years of age (30.6%), and 26 years of age and older (6%). Four categories of academic performance were considered, which are presented in Table 4:

Table 4

Grading scales for learning in university education

Ranking	Scale	Description
Featured	20 - 18	When the student evidences the achievement of the expected learning, even demonstrating a solvent and very satisfactory management in all the proposed tasks.
Scheduled	17 - 14	When the student evidences the achievement of the expected learning in the programmed time.
In process	13 - 11	When the student is on the way to achieve the anticipated learning, for which he/she requires accompaniment during a reasonable time to achieve it.
At startup	10 - 00	When the student is beginning to develop the expected learning or evidences difficulties for the development of these and needs more time of accompaniment and intervention from the teacher according to his/her pace and learning style.

Note. Adapted from Digital Resources Education Platform (2019).

Two variables were analyzed, the first is learning styles (independent variable), the data were collected using the Honey - Alonso CHAEA; which is a self-administered questionnaire of dichotomous scoring that randomly distributes the items by style forming a single set. The maximum score that can be obtained is 20 points for each style and the interpretation scales proposed by Alonso, Gallego and Honey provide the criteria obtained by style, see table 5. The second variable is academic performance (dependent variable) which is expressed in grades, on a scale of 0 to 20, obtained by the students in the 2021-I academic cycle. The data were entered into an Excel database and transferred to the SPSS 26 program to obtain descriptive statistics.

Table 5
General scale. Preference in Learning Styles

Styles	Very low	Download	Moderate	High	Very High
Active	0 - 6	7 - 8	9 - 12	13 - 14	15 - 20
Reflective	0 - 10	11 - 13	14 - 17	18 - 19	20
Theoretical	0 - 6	7 - 9	10 - 13	14 - 15	16 - 20
Pragmatic	0 - 8	9 - 10	11 - 13	14 - 15	16 - 20

Note. Alonso et al. (2012, p. 114).

In order to respond to the hypotheses posed between the variables of academic performance and learning styles, descriptive statistics such as measures of central tendency were generated, in addition to normality, variance, Kruskal-Wallis and Chi-square tests. The ethical aspect has been considered in each of the stages of the study, from communication with the academic institution, the autonomy and acceptance of the participants in the survey, as well as the reliability and veracity of the information provided. Also, approval was obtained from the university's Ethics Committee.

Results

In accordance with the research objectives, the main results are presented below.

Table 6

Academic performance by preferred learning style of the students of the Administration and Neg. ULASALLE International

Academic performance	Total		Active		Reflective		Theoretical		Pragmatic	
	Number of students	Share (%)	Number of students	Share (%)	Number of students	Share (%)	Number of students	Share (%)	Number of students	Share (%)
Total	183	100.0	43	23.5	18	9.8	72	39.3	50	27.3
Featured	17	100.0	3	17.6	-	-	8	47.1	6	35.3
Scheduled	153	100.0	36	23.5	16	10.5	60	39.2	41	26.8
In process	13	100.0	4	30.8	2	15.4	4	30.8	3	23.1

Note. There have been no cases of students who are at the beginning stage in their academic performance.

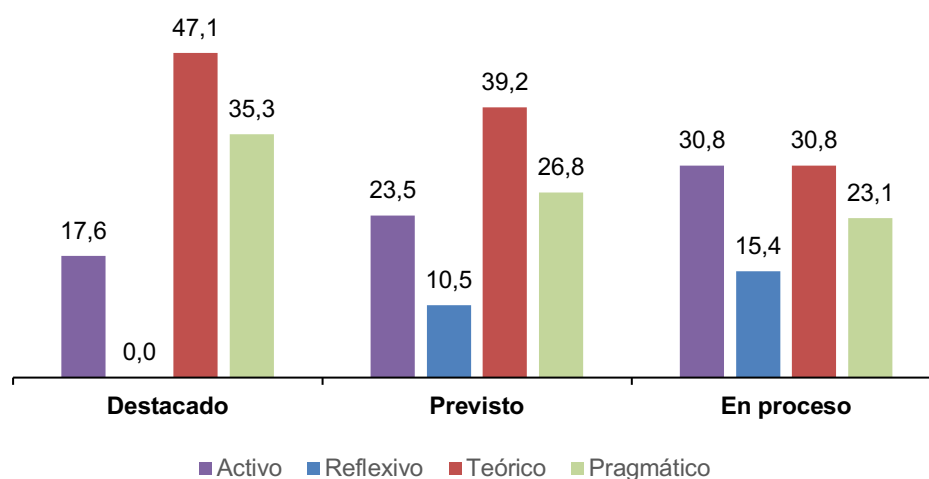
Table 6 relates the learning styles to the classification for academic performance, that is, to the learning style preferred by the student in relation to the grade obtained in the cycle prior to taking the CHAEA.

Note 1 states that academic performance has not been considered in the Home classification, which ranges from 0 to 10, due to lack of data.

It is observed that, out of the total 183 students, the majority have a rating that is in the Predicted category, and furthermore, it is the Theoretical learning style that has the highest preference. Figure 1 below presents the information graphically.

Figure 1

Preferred learning style by academic performance of the students of the Administration and Neg. ULASALLE International

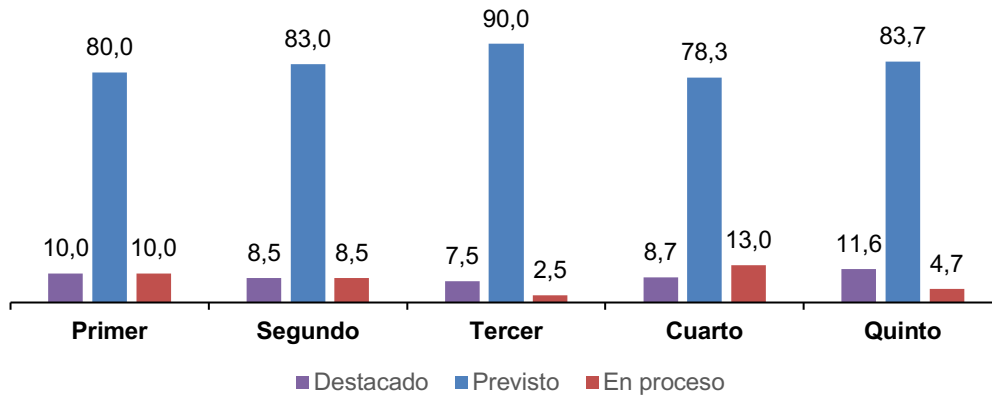


With the information obtained, it can be affirmed that there is a direct relationship between the variables, and for the Reflective learning style no data was obtained for students with performance classified as Outstanding. In addition, Alonso et al. (2012) proposes some questions often asked by Theorists, such as: will I have the opportunity to ask several questions, is there a clear structure and objectives between the objectives and activities of the program, will the concepts I will be given improve my knowledge, among others. These proposed questions support the teacher in preparing his or her study session in relation to the needs of his or her students.

Then, to deepen the analysis of the Academic Performance in the International Business and Management career, the percentage participation of students in relation to the year of study and the level of academic performance is correlated, as can be seen in Figure 2.

Figure 2

Academic performance by year of the students of the Administration and Neg. ULASALLE International



Each academic year is equivalent to two study cycles, and in all of them it is identified that the students' performance is in the Predicted category, and in the first two years the percentage participation between the student whose progress is between In Process and Outstanding, keeps the same portion. The next category with the highest proportion of academic performance is Outstanding. Below is more detail on the intensity of preference in each of the learning styles, according to the level of studies attained.

Figure 3

Intensity of preference of the Active learning style of the students of the Administration and Neg. ULASALLE International students, according to level reached

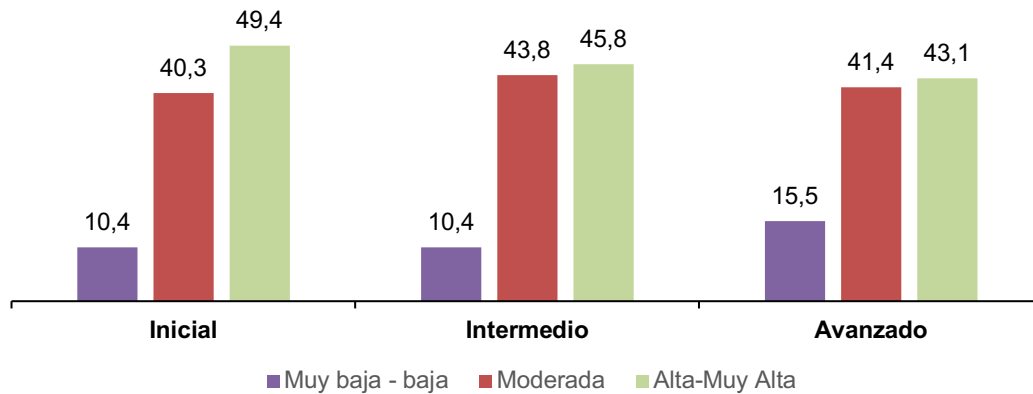
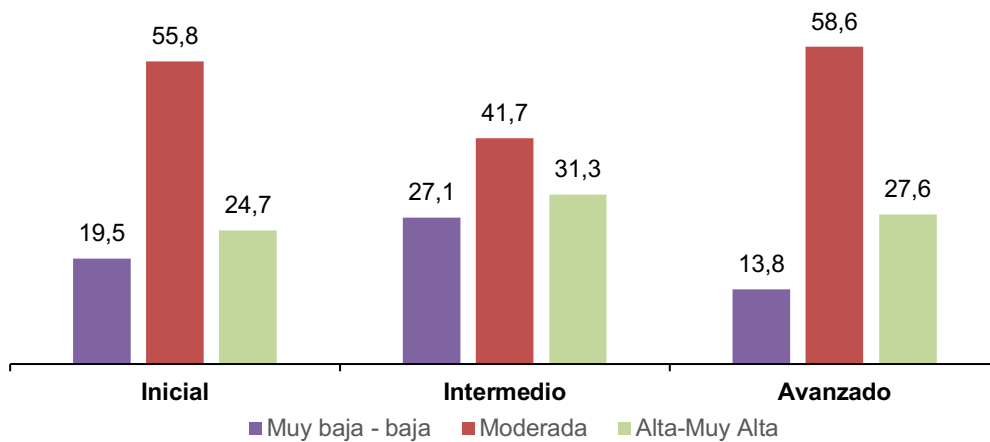


Figure 3 illustrates the information relating the level of studies achieved, whether initial, intermediate or advanced, in relation to the intensity of learning style preference, which can be very low - low, moderate and high - very high. In the case of the Active learning style, it can be seen that the intensity in each of the levels reached is in the highest proportion between high - very high, followed by moderate.

Figure 4

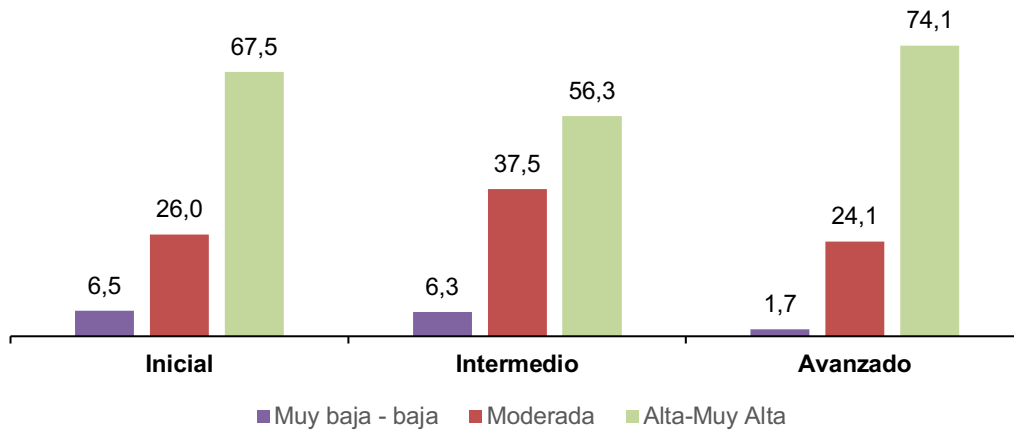
Intensity of preference of the Reflective learning style of the students of the Administration and Neg. ULASALLE International students, according to level reached



In Figure 4 it can be identified that the intensity in the preference of the Reflective learning style in each of the study levels is moderate, and in terms of very low-low advancement it has a considerable percentage participation in each of the cycles, in comparison with the rest of the styles.

Figure 5

Intensity of preference of the Theoretical learning style of the students of the Administration and Neg. ULASALLE International students, according to level reached



In the case of the Theoretical learning style, Figure 5 shows that the intensity in each of the levels reached is in the highest proportion in high - very high, followed by moderate intensity.

Figure 6

Intensity of preference of the Pragmatic learning style of the students of the Administration and Neg. ULASALLE International students, according to level reached

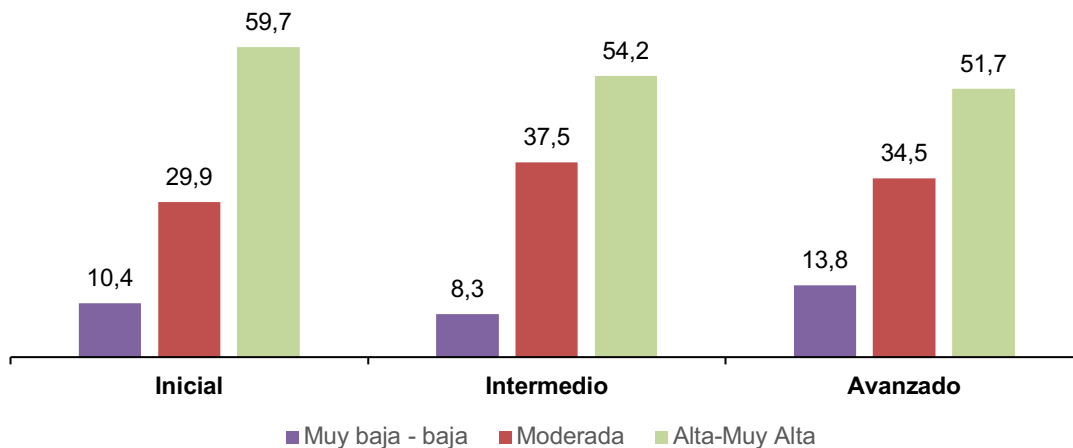


Figure 6 shows that the intensity of preference for the Pragmatic learning style at all levels of study achieved is high - very high, followed by moderate intensity. As can be seen, only the Reflective style shows a moderate level of intensity and then high - very high, the opposite of the other three cases.

The following table presents the assessment of the learning styles of the Honey - Alonso model in relation to the number of students and percentage participation by preferred learning style.

Table 7

Preferred learning style of the students of the Administration and Neg. ULASALLE International

Style of learning	Number of Students	Participation percentage (%)
Total	183	100.0
Active	43	23.5
Reflective	18	9.8
Theoretical	72	39.3
Pragmatic	50	27.3

As can be seen in Table 7, the learning style with the highest value or preference is the Theoretical style with 39.3% of participation, then with a participation of 27.3% the students prefer the Pragmatic style, in third place is the Active style with 23.5% and, with a lower participation is the Reflective style with 9.8%. Figure 7 below shows the percentage of students and intensity of preference, according to learning style.

Figure 7

Preference of the Active learning style of the students of the Administration and Neg. ULASALLE International

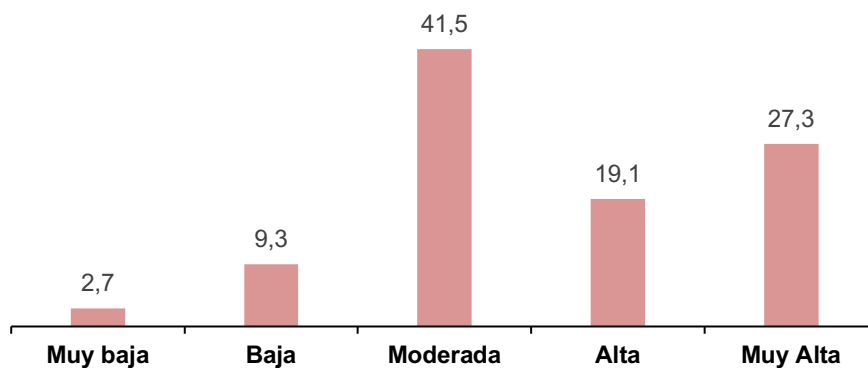


Figure 7 identifies that the preference for the Active learning style is mostly moderate, which according to the model means that this level of preference allows the student to have more opportunity to adapt to other learning styles and therefore assimilate different types of information. For students who have a very high or high preference Alonso et al. (2012) proposes some activities with which they will learn better, such as: active intervention, problem solving and competition in teams, among others.

Figure 8

Preference of the Reflective learning style of the students of the Administration and Neg. ULASALLE International

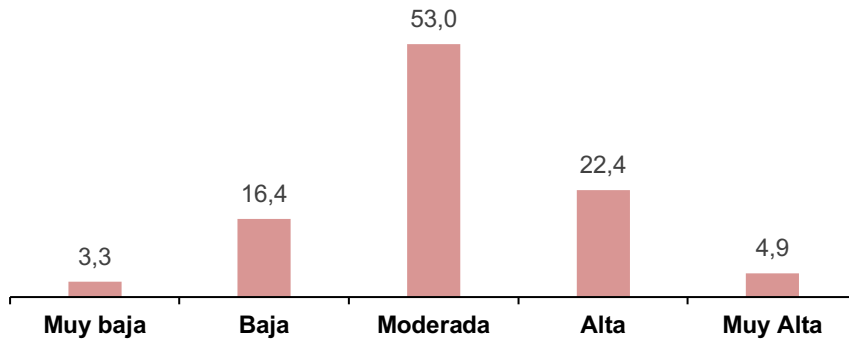


Figure 8 demonstrates that the preference that students have for the Reflective learning style has a greater moderate tendency. For students who have a high or very high preference to this style Alonso et al. (2012) proposes activities such as: observing and listening, detailed analysis, among others.

Figure 9

Preference of the Theoretical learning style of the students of the Administration and Neg. ULASALLE International

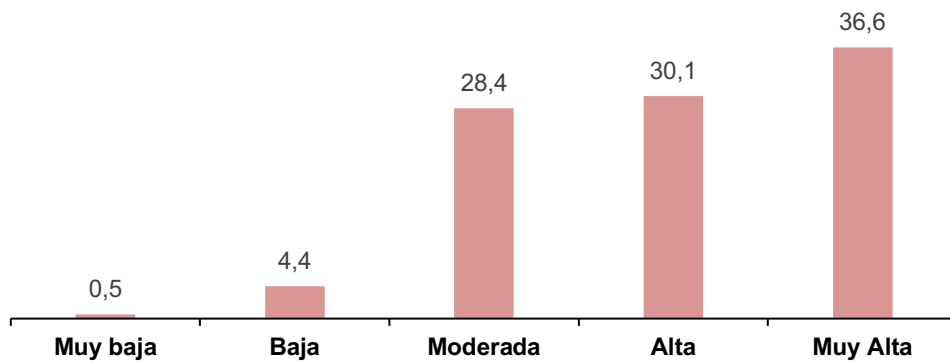
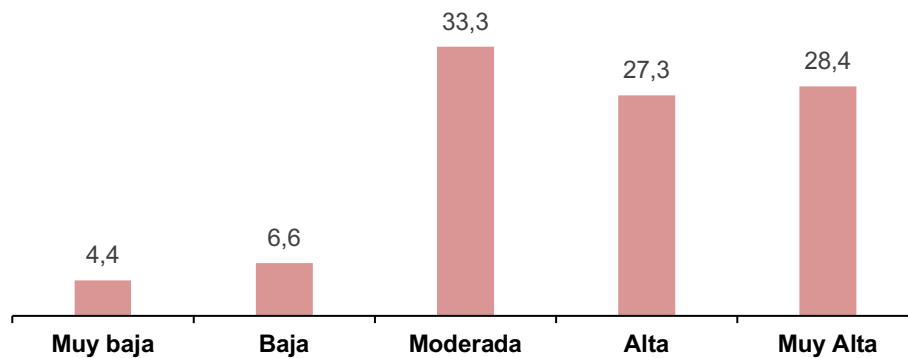


Figure 9 shows that the preference that students have for the Theoretical learning style reflects a very high and high trend. Alonso et al. (2012) proposes that these students learn better when they: encounter new concepts, have the possibility to question and explore methodically, among others.

Figure 10

Preference of the Pragmatic learning style of the students of the Administration and Neg. ULASALLE International



The previous graph shows the level of preference that students have for the Pragmatic learning style is mostly moderate, however, the high and very high preference also has an important percentage participation, so using the proposal of Alonso et al. (2012), some actions are identified that allow them to learn better, such as: acquiring techniques and putting them into practice quickly, developing action plans, reviewing videos and films, among others. For further analysis on the assessment of learning styles, Table 8 presents the average trend of the styles.

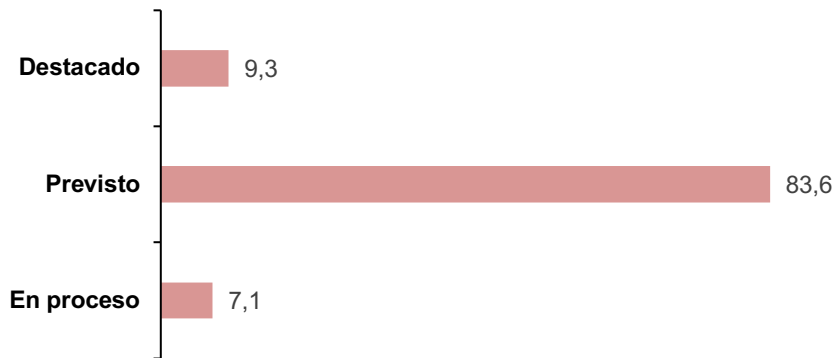
Table 8
Average trend of the learning styles of the students in the career of Administration and Neg. ULASALLE International

Style of learning	Number of students	Average score	Preference
Active	183	12.4	Moderate
Reflective	183	15.8	Moderate
Theoretical	183	14.4	High
Pragmatic	183	13.9	High

The score with the lowest academic performance, as shown in the previous table, is the Active learning style, which enjoys a moderate preference, and the learning style with the highest score corresponds to the Reflective, also with a moderate preference. To analyze the students' average score in more detail, the assessment of academic performance is analyzed below:

Figure 11

Percentage of students in the Administration and Neg. ULASALLE Internationals, by performance



Of the four categories on the rating scale, a lower percentage is found in the In Process category, which reflects the effort of both the teacher and the student to meet the academic objectives of the first cycle of the 2021 period.

Then, to examine the degree of correspondence between learning style and gender of students in the International Business and Management major, the relationship between learning styles, academic performance and gender is presented.

Figure 12

Average grade point average of the students of the Administration and Neg. ULASALLE International Students, by learning style, according to gender

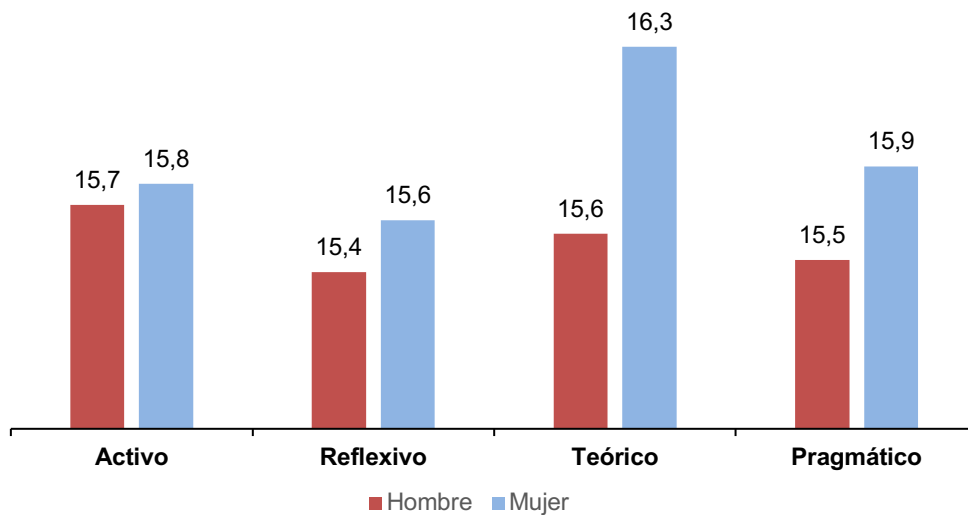


Figure 12 shows that the average grade of male students is slightly lower than that of female students, 15.6 and 15.9, respectively. Both averages are classified as Predicted, which means that students in general show learning achievements as expected by their teacher. To extend the analysis of both variables, the preference of each learning style, according to the student's gender, is presented below.

Figure 13

Preference of the Active learning style of the students of the Administration and Neg. ULASALLE Internationals, by gender

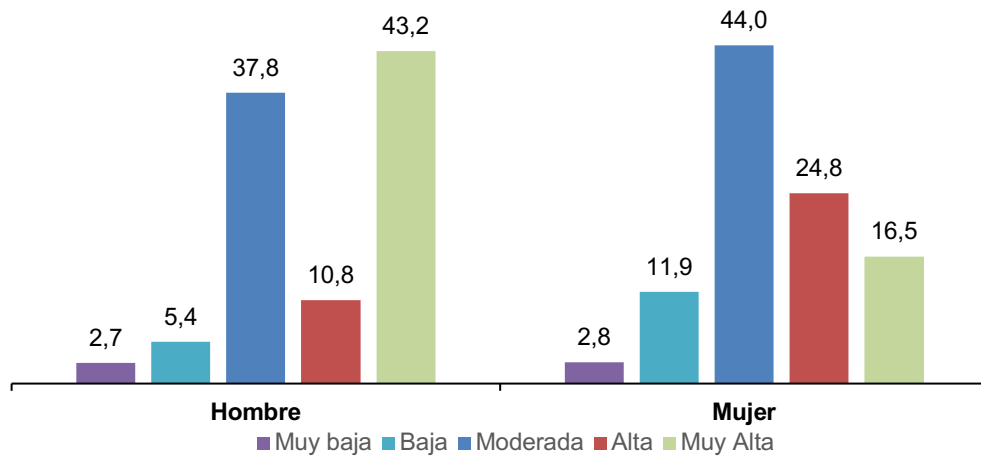


Figure 14

Preference of the Reflective learning style of the students of the Administration and Neg. ULASALLE International students, by gender

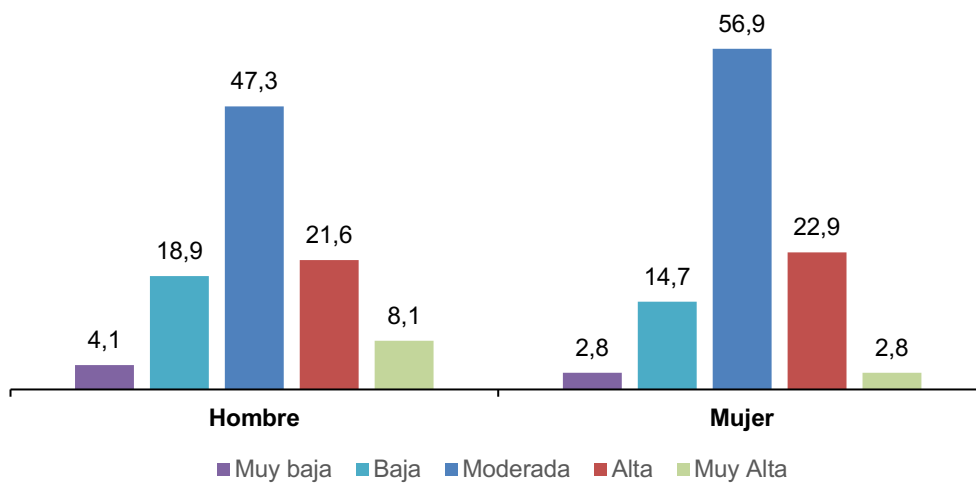


Figure 15

Preference of the Theoretical learning style of the students of the Administration and Neg. ULASALLE Internationals, by gender

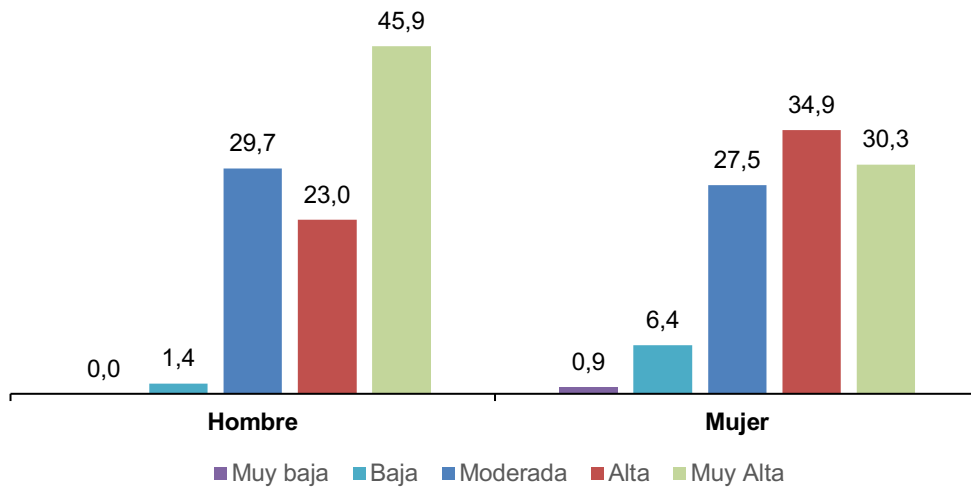
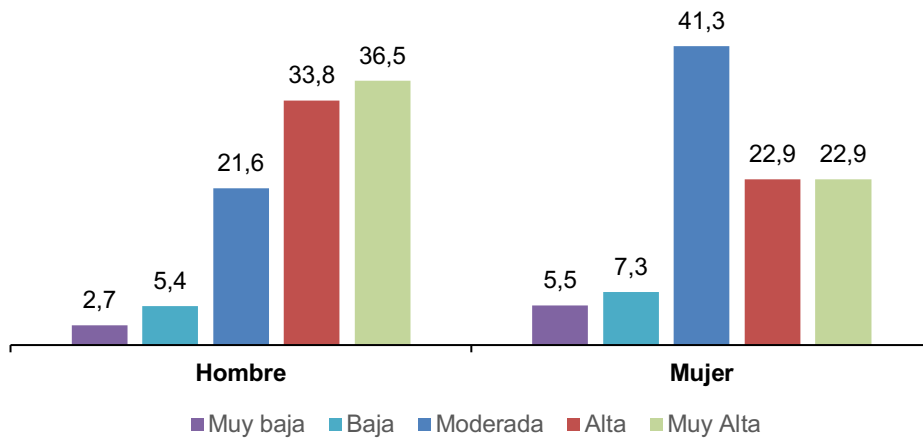


Figure 16

Preference of the Pragmatic learning style of the students of Administration and Management degree. ULASALLE Internationals, by gender

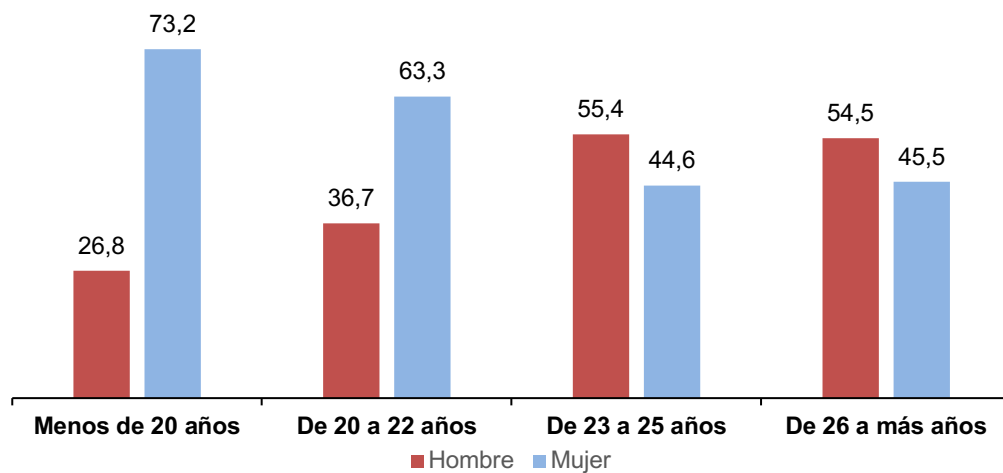


With the previous information, it can be seen that the preference for each of the styles is not related to the sex of the students. However, most of the time the preference for women is moderate and in the case of men it is high.

In addition, the gender variable is related to the percentage participation of students in each of the categories in the age variable, as shown below:

Figure 17

Percentage of students in the Administration and Neg. ULASALLE International Students, by Sex, according to age range



The previous detail shows that the percentage participation of male students increases as their age increases, while the opposite happens in the case of female students, who have a higher percentage participation in the first two categories (under 20 years old and 20 to 22 years old), and in the last two categories (23 to 25 years old and 26 years old and older) it practically remains the same.

In addition, this research also aims to examine the degree of correspondence between the study cycle and the preponderant learning style among students of International Business and Management.

Figure 18

Average score of the students of the Administration and Business Administration program. ULASALLE International Students by level achieved, according to learning style

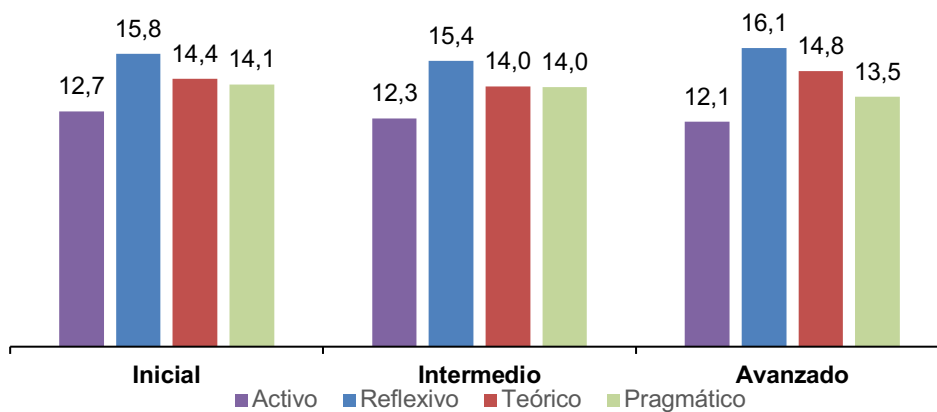


Table 10

Average score of the students of the Administration and Business Administration program. International

of ULASALLE by learning style, by year of study

Year of study	Active		Reflective		Theoretical		Pragmatic	
	# of students	Average score	# of students	Average score	# of students	Average score	# of students	Average score
Total	183	12.4	183	15.8	183	14.4	183	13.9
First	30	13.2	30	16.3	30	14.4	30	14.4
Second	47	12.3	47	15.4	47	14.5	47	14.0
Third	40	12.3	40	15.4	40	13.8	40	13.9
Fourth	23	11.8	23	16.2	23	14.9	23	13.4
Fifth	43	12.3	43	15.9	43	14.9	43	13.7

Table 10 groups the study cycles, and since the International Business and Management degree program contains 10 cycles, 5 years are presented, each with the number of students who have a preference in relation to a learning style and the average score obtained in the previous cycle.

Discussion and conclusions

In order to know the learning styles of university students, the research shows the preference of the style and the one most frequently used by the students, which also allows knowing how they experience their learning process and with this it will be possible for the teachers to direct the activities and methodology in general, to accompany them all towards their significant learning. The results are presented below in relation to the hypotheses proposed and the pertinent discussion of these results:

The preferred style for ULASALLE students is Theoretical, and this result differs with respect to the predominance of the learning style in the rest of the researches that present this analysis and expose the Reflective style as the preferred one in their students; these results are explained from the very essence of the schools analyzed, which were Nursing, Medicine and System. About the student's profile, the present sample has a participation of 59.6% of women, which allows us to know the level of interest shown by women regarding their learning style; this fact coincides with the researches that have also exposed the profile of their sample as the case of the Nursing school that presented 82.9% of the female sample, the same happens with the Medical school that has 73% of women; however for Maurera et al. (2015), whose research was conducted for the Pedagogy school a majority is represented by male students.

In addition, it is stated that there is a relationship between the learning styles of the model proposed by Honey - Alonso with the academic performance of university students (Significance $0.198 > 0.05$), this manifestation is related to the results of Huamán et al. (2020) and Maureira et al. (2015), although this is not the case with the rest of the research. Likewise, having expanded the analysis on the intensity of learning style preference and knowing the limitations of having a high preference for any one type, it is concluded that the teacher should promote the use of all styles as part of a balanced methodology so that students achieve significant learning by making use of all of them.

On the correlation between the preferred learning style with the student's sex, the results show that there is no relationship between the variables (Asymptotic significance (bilateral), $0.419 > 0.05$), results that coincide with the rest of the research. In addition, it is the Predicted academic performance that prevails. Chambi, Manrique and Espinoza (2020) also obtained positive academic results. As to whether there is any degree of correspondence between the study cycle and the preferred learning style, the results indicate that the variables are not related to each other (asymptotic significance (bilateral), $0.667 > 0.05$).

The main limitation of the study is that the application of the survey was virtual, so approaching the student and motivating him/her to fill out an 80-question survey required more time than expected. On the other hand, with the future objective of expanding the research, it is possible to use the CHAEA tool in the other two careers of La Salle University, to see if there is any relationship between the preferred learning style of the students in Business (Administration and Business Administration) and the preferred learning style of the students in Business (Administration and Management), International, Social (Law) and Engineering (Software Engineering).

In general, given that learning styles are constructs that have an impact on the way people learn, it is convenient for all university institutions to consider this tool in the different moments of the didactic model they use, from session planning to student assessment. Finally, it is concluded that in order for university teachers to be able to use the CHAEA questionnaire, it is necessary that they first receive training from their academic institution regarding the model, its use and benefits. The impact can be measured based on the training of the entire teaching staff and the generation of strategies based on the use of the tool by the teaching staff and students.

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